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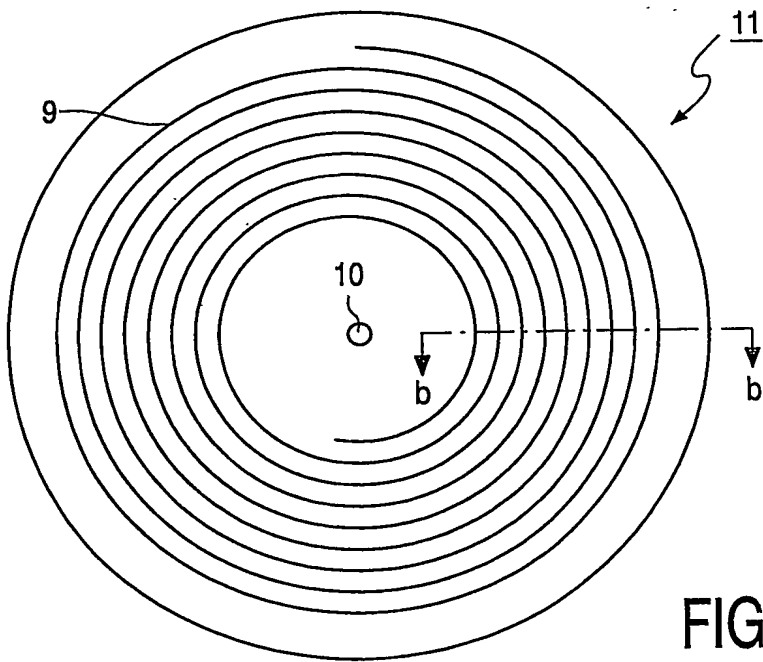


FIG. 1a

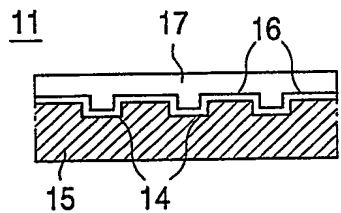


FIG. 1b

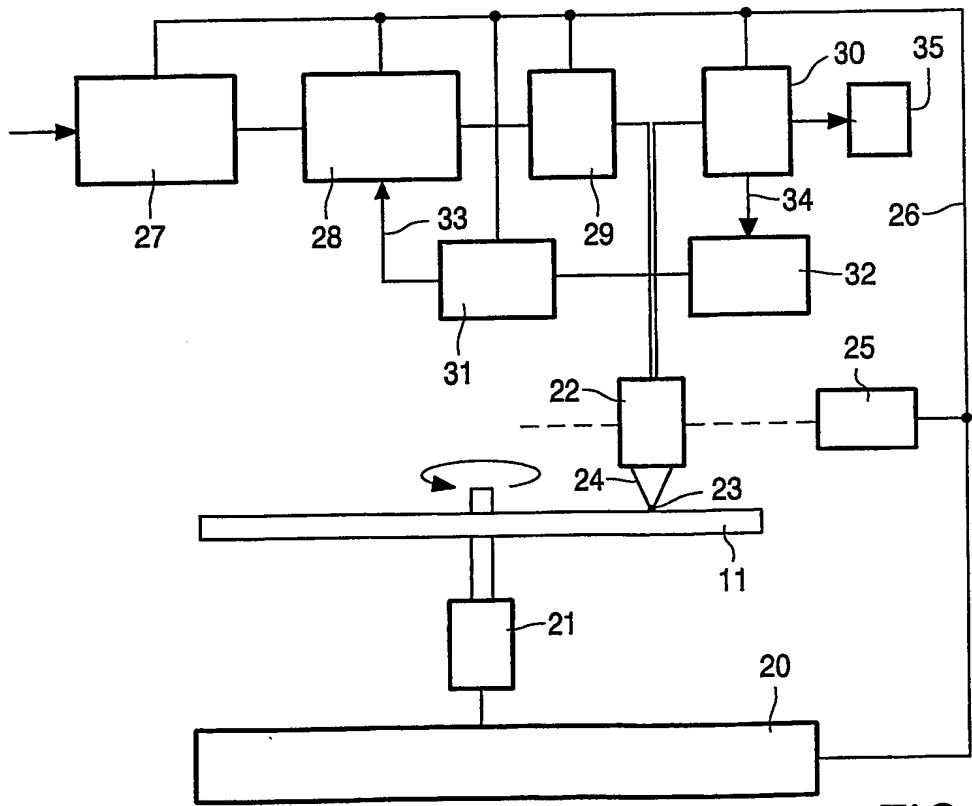


FIG. 2

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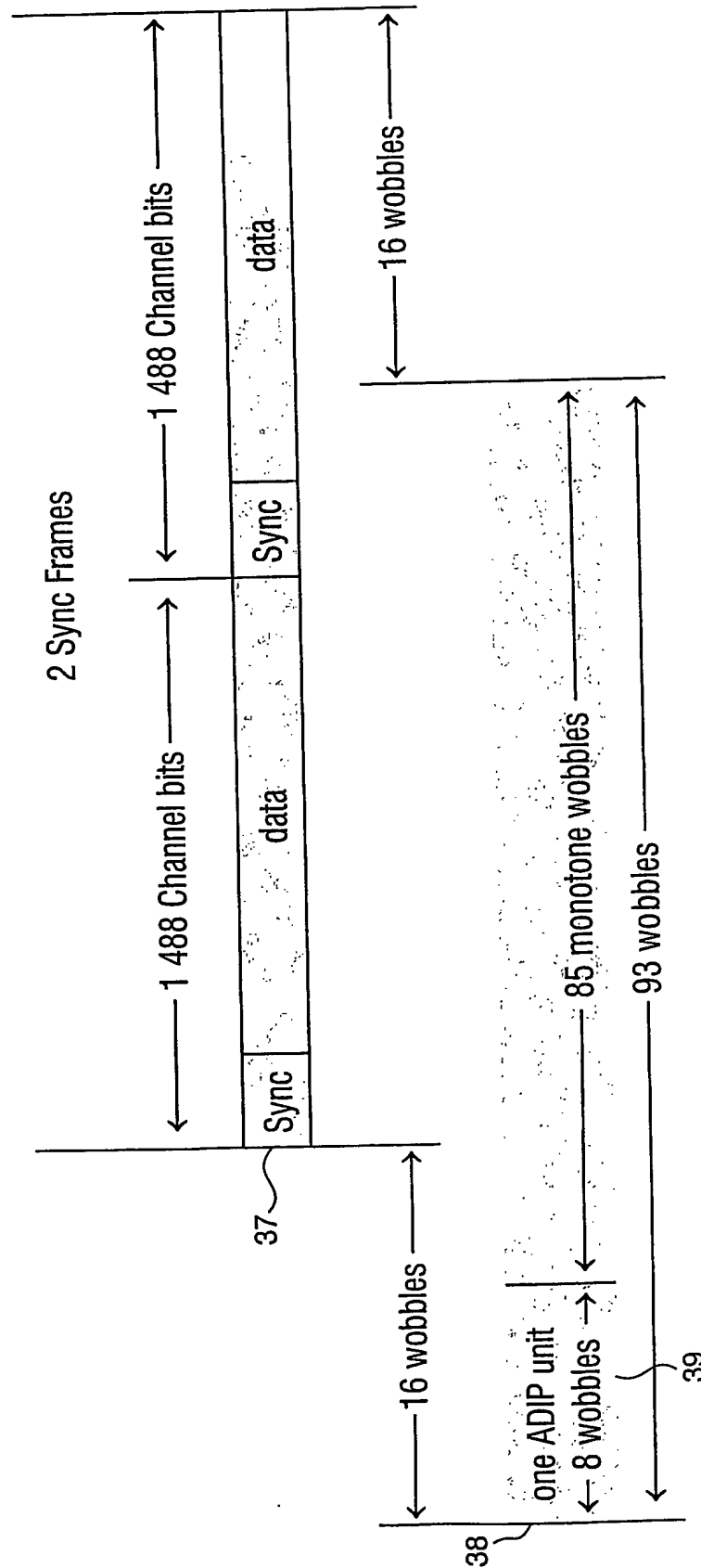


FIG.3

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	wobble 0		wobble 1 to 3		wobble 4 to 7	
	↑	↓	↑	↓	↑	
↑	sync unit		word sync			↑
	data unit		bit sync		data bit 1	
	data unit		bit sync		data bit 2	
	:		:		:	
	:		:		:	
4 ADIP words	↓		bit sync		data bit 51	↓
↓						↓

4 Physical Sectors

1 ECC Block

FIG.4

nibble N 0	bit 0	bit 1	bit 2	bit 3	↑	6 nibbles	ADIP address
nibble N 1	bit 4	bit 5	:	:			
:	:	:	:	:			
:	bit 20	:	:	bit 23	↓		
:	bit 24				↑	2 nibbles	AUX data
nibble N 7	bit 28		:	bit 31	↓		
nibble N 8	bit 32	:	:	:	↑	5 nibbles	Nibble based R-S ECC
:	:	:	:	:			
:	:	:	:	:			
nibble N 12	bit 48	bit 49	bit 50	bit 51	↓		

FIG.5

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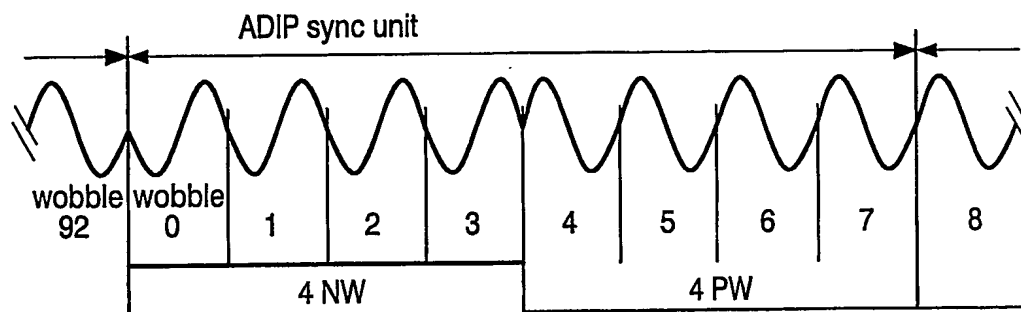


FIG. 6a

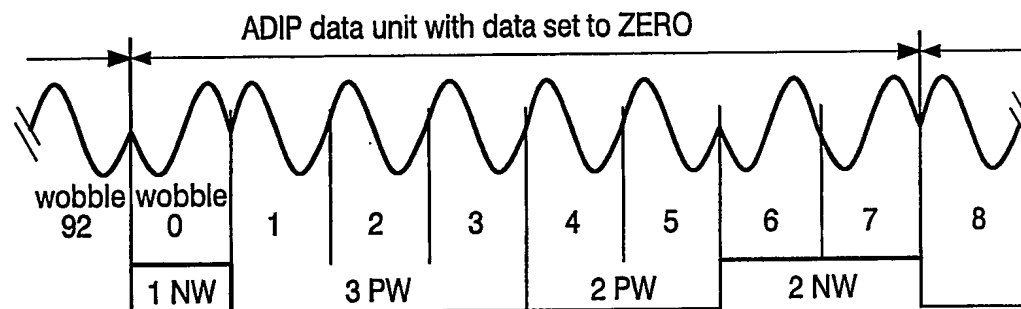


FIG. 6b

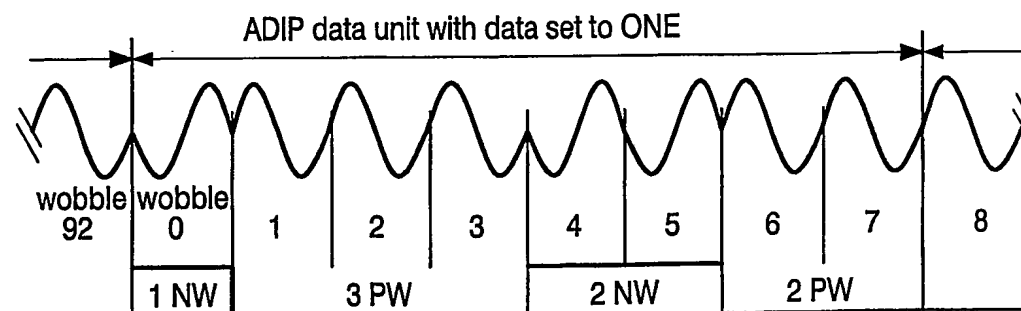


FIG. 6c

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Byte number	Content	Number of bytes
0	Disc Category and Version Number: indicates the version of the disc and identifies the definitions of the data in bytes 0 to 63 (important for backwards compatibility). Drives not acquainted with the specific Version Number of a disc should not try to record on that disc using the information in bytes 0 to 63.	1
1	Disc size	1
2	Disc structure	1
3	Recording density	1
4 to 15	Data Zone allocation	12
16	Set to (00)	1
17	Reserved – All (00)	1
18	Extended Information indicators	1
19 to 26	Disc Manufacturer ID	8
27 to 29	Media type ID	3
30	Product revision number	1
31	number of Physical format information bytes in use in ADIP up to byte 63 (according to first generation: set to 56)	1
32	Reference recording velocity	1
33	Maximum recording velocity	1
34	Wavelength λ_{IND}	1
35	normalized Write power dependency on Wavelength ($dP/d\lambda$)/(P_{IND}/λ_{IND})	1
36	Maximum read power at reference velocity	1
37	P_{IND} at reference velocity	1
38	b_{target} at reference velocity	1
39	Maximum read power at maximum velocity	1
40	P_{IND} at maximum velocity	1
41	b_{target} at maximum velocity	1
42	$T_{top} (^3 4)$ first pulse duration for cm $^3 4$ at reference velocity	1
43	$T_{top} (=3)$ first pulse duration for cm =3 at reference velocity	1
44	T_{mp} multi pulse duration at reference velocity	1
45	T_{lp} last pulse duration at reference velocity	1
46	$dT_{top} (^3 4)$ first pulse lead time for cm $^3 4$ at reference velocity	1
47	$dT_{top} (=3)$ first pulse lead time for cm =3 at reference velocity	1
48	dT_{lc} 1 st pulse leading edge correction for ps =3 at reference velocity	1
49	$T_{top} (^3 4)$ first pulse duration for cm $^3 4$ at maximum velocity	1
50	$T_{top} (=3)$ first pulse duration for cm =3 at maximum velocity	1
51	T_{mp} multi pulse duration at maximum velocity	1
52	T_{lp} last pulse duration at maximum velocity	1
53	$dT_{top} (^3 4)$ first pulse lead time for cm $^3 4$ at maximum velocity	1
54	$dT_{top} (=3)$ first pulse lead time for cm =3 at maximum velocity	1
55	dT_{lc} 1 st pulse leading edge correction for ps =3 at maximum velocity	1
56 to 63	Reserved – All (00)	8
64 to 95	Extended Information block 0	32
96 to 127	Extended Information block 1	32
128 to 159	Extended Information block 2	32
160 to 191	Extended Information block 3	32
192 to 223	Extended Information block 4	32
224 to 247	Extended Information block 5	24
248 to 255	Reserved for use in the Control Data Zone – All (00)	8

FIG. 7

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bit 7 to bit 4	dT _{le} shift (T _w)
0000	0
0001	0,0625
0010	0,1250
0011	0,1875
0100	0,2500
0101 to 1011	reserved
1100	- 0,2500
1101	- 0,1875
1110	- 0,1250
1111	- 0,0625

FIG.8

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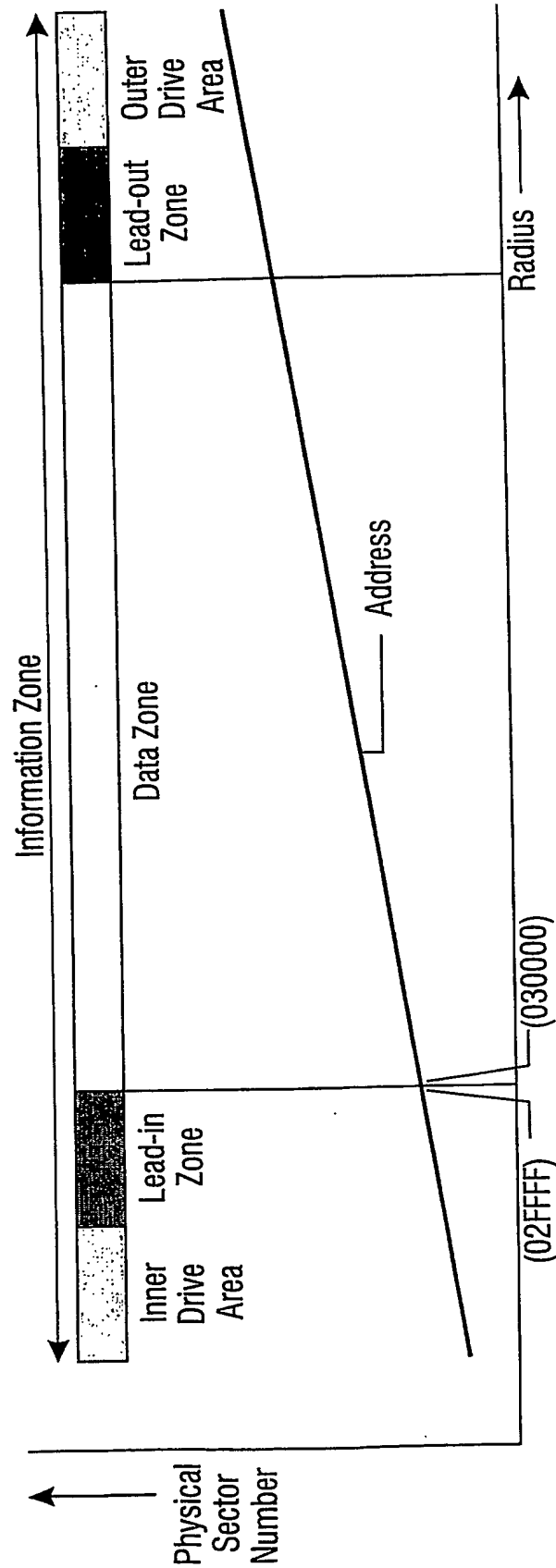


FIG.9

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	Description	Nominal radius in mm	PSN of the first Physical Sector	Number of Physical Sectors
<u>Inner Drive Area</u>	Initial Zone	start 22,000 mm	--	blank
	Inner Disc Test Zone	start 22,643 mm	(023480)	16 384
	Inner Disc Count Zone	start 23,079 mm	(027480)	4 096
	Inner Disc Administration Zone	start 23,186 mm	(028480)	4 096
	Session Map Zone	start 23,293 mm	(029480)	4 096
<u>Lead-in</u>	Guard Zone 1	start 23,400 mm	(02A480)	14 848
	Reserved Zone 1		(02DE80)	4 096
	Reserved Zone 2		(02EE80)	64
	Inner Disc Identification Zone		(02EEC0)	256
	Reserved Zone 3		(02EFC0)	64
	Reference Code Zone	start 23,896 mm	(02F000)	32
	Buffer Zone 1		(02F020)	480
	Control Data Zone		(02F200)	3 072
	Buffer Zone 2		(02FE00)	512
Data	Data Zone	start 24,000 mm	(030000)	2 295 104 max
<u>Lead-out</u>	Buffer Zone 3	start 58,000 mm max	(260540) max	768
	Outer Disc Identification Zone		(260840) max	256
	Guard Zone 2		(260940) max	4096 min
<u>Outer Drive Area</u>	Outer Disc Administration Zone	start 58,053 mm	(261940)	4096
	Outer Disc Count Zone	start 58,096 mm	(262940)	4096
	Outer Disc Test Zone	start 58,139 mm	(263940)	16 384
	Guard Zone 3	start 58,310 mm	(2652C0)	blank

FIG.10

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	Initial Zone	
Physical Sector 144 512	Inner Disc Test Zone 16 384 Physical Sectors	Physical Sector (023480)
Physical Sector 160 895 Physical Sector 160 896	Inner Disc Count Zone 4 096 Physical Sectors	Physical Sector (02747F) Physical Sector (027480)
Physical Sector 164 991 Physical Sector 164 992	Inner Disc Administration Zone 4 096 Physical Sectors	Physical Sector (02847F) Physical Sector (028480)
Physical Sector 169 087 Physical Sector 169 088	Session Map Zone 4 096 Physical Sectors	Physical Sector (02947F) Physical Sector (029480)
Physical Sector 173 183	Guard Zone 1	Physical Sector (02A47F)

FIG.11

Physical Sector of SEM block	Main Data byte position	Description	number of bytes
0	D ₀ to D ₃	Content Descriptor	4
0	D ₄ to D ₇	Reserved and set to (00)	4
0	D ₈ to D ₃₉	Drive ID	32
0	D ₄₀ to D ₆₃	Reserved and set to (00)	24
0	D ₆₄ to D ₉₅	Session item 0	16
0	...		
0	D _{64+i×16} to D _{95+i×16}	Session item i	16
0	
0	D _{64+(N-1)×16} to D _{95+(N-1)×16}	Session item N-1	16
0	D _{64+N×16} to D _{2 047}	Reserved and set to (00)	1 984 - N×16
1 to 15	D ₀ to D _{2 047}	Reserved and set to (00)	15×2 048

FIG.12

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Item byte position	Description	number of bytes
B ₀ to B ₂	Session item descriptor	3
B ₃	Session number	1
B ₄ to B ₇	Session start address	4
B ₈ to B ₁₁	Session end address	4
B ₁₂ to B ₁₅	Reserved and set to (00)	4

FIG.13

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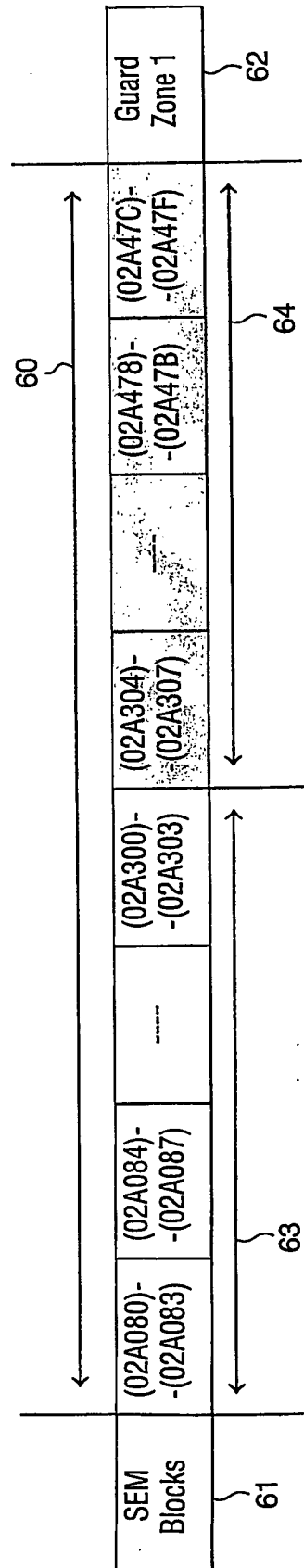


FIG.14

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Session Map Zone		
Physical Sector 173 184	Guard Zone 1 14 848 Physical Sectors with Main Data set to (00)	Physical Sector (02A480)
Physical Sector 188 031 Physical Sector 188 032	Reserved Zone 1 4 096 Physical Sectors	Physical Sector (02DE7F) Physical Sector (02DE80)
Physical Sector 192 127 Physical Sector 192 128	Reserved Zone 2 64 Physical Sectors	Physical Sector (02EE7F) Physical Sector (02EE80)
Physical Sector 192 191 Physical Sector 192 192	Inner Disc Identification Zone 256 Physical Sectors	Physical Sector (02EEBF) Physical Sector (02EEC0)
Physical Sector 192 447 Physical Sector 192 448	Reserved Zone 3 64 Physical Sectors	Physical Sector (02EFBF) Physical Sector (02EFC0)
Physical Sector 192 511 Physical Sector 192 512	Reference Code Zone 32 Physical Sectors	Physical Sector (02EFFF) Physical Sector (02F000)
Physical Sector 192 543 Physical Sector 192 544	Buffer Zone 1 480 Physical Sectors with Main Data set to (00)	Physical Sector (02F01F) Physical Sector (02F020)
Physical Sector 193 023 Physical Sector 193 024	Control Data Zone 3 072 Physical Sectors	Physical Sector (02F1FF) Physical Sector (02F200)
Physical Sector 196 095 Physical Sector 196 096	Buffer Zone 2 512 Physical Sectors with Main Data set to (00)	Physical Sector (02FDFF) Physical Sector (02FE00)
Physical Sector 196 607	Data Zone	Physical Sector (02FFFF)

FIG.15

Physical format information 2 048 bytes
Disc manufacturing information 2 048 bytes
Content provider information 14 x 2 048 bytes

FIG.16

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70	Data Zone	
max Physical Sector 2 491 712	Buffer Zone 3	Physical Sector (260540) max
max Physical Sector 2 492 479	768 Physical Sectors	Physical Sector (26083F) max
max Physical Sector 2 492 480	with Main Data set to (00)	Physical Sector (260840) max
	Outer Disc Identification Zone	
max Physical Sector 2 492 735	256 Physical Sectors	Physical Sector (26093F) max
max Physical Sector 2 492 736	Guard Zone 2	Physical Sector (260940) max
	min 4096 Physical Sectors	
Physical Sector 2 496 831	with Main Data set to (00)	Physical Sector (26193F)
	Outer Disc Administration Zone	

FIG.17

Physical Sector 2 496 832	Guard Zone 2	Physical Sector (261940)
Physical Sector 2 500 927	Outer Disc Administration Zone	Physical Sector (26293F)
Physical Sector 2 500 928	4 096 Physical Sectors	Physical Sector (262940)
Physical Sector 2 505 023	Outer Disc Count Zone	Physical Sector (26393F)
Physical Sector 2 505 024	4 096 Physical Sectors	Physical Sector (263940)
Physical Sector 2 521 407	Outer Disc Test Zone	Physical Sector (26793F)
Physical Sector 2 521 408	16 384 Physical Sectors	Physical Sector (267940)
	Guard Zone 3 Blank	

FIG.18

Session	Zone	Description	Number of Physical Sectors
	Inner Drive Area	— See Fig. 11	—
<i>Session 1</i>	<u>Lead-in</u>
		Reserved Zone 2	64
		Inner Disc Identification Zone	256
	
		Control Data Zone	3 072
		Buffer Zone 2	512
	<u>Data</u>	Data Zone	16 min
	<u>Closure</u>	Buffer Zone C	768
		Outer Session Identification Zone	256
<i>Session 2</i>	<u>Intro</u>	Buffer Zone A	64
		Inner Session Identification Zone	256
		Session Control Data Zone	640
		Buffer Zone B	64
	<u>Data</u>	Data Zone	16 min
	<u>Closure</u>	Buffer Zone C	768
		Outer Session Identification Zone	256
<i>Session N</i>	<u>Data</u>	Data Zone	...
	
	<u>Lead-out</u>	Buffer Zone 3	768
		Outer Disc Identification Zone	256
	
	Outer Drive Area	— See Fig. 18	—

FIG.19

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<i>Session n-1</i>	<u>Data</u>	Data Zone	User Data
	<u>Closure</u>	Buffer Zone C	48 ECC Blocks with (00)
		Outer Session Identification Zone	16 ECC Blocks with DCBs and/or (00)
<i>Session n</i>	<u>Intro</u>	Buffer Zone A	4 ECC Blocks with (00)
		Inner Session Identification Zone	1 ECC Block with an SDCB
			blank
		Session Control Data Zone	blank
	<u>Data</u>	Buffer Zone B	4 ECC Blocks with (00)
		Data Zone	Reserved Area (optional)
			User Data
			blank

FIG.20

Physical Sector of each DCB	Main Data BP	Description
0	D ₀ to D ₃	Content Descriptor
0	D ₄ to D ₇	Unknown Content Descriptor Actions
0	D ₈ to D ₃₉	Drive ID
0	D ₄₀ to D ₂₀₄₇	Content Descriptor Specific
1 to 15	D ₀ - D ₂₀₄₇	Content Descriptor Specific

FIG.21

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Physical Sector of ECC block	Main Data byte position	Description	number of bytes
0	D ₀ to D ₃	Content Descriptor	4
0	D ₄ to D ₇	Unknown Content Descriptor Actions	4
0	D ₈ to D ₃₉	Drive ID	32
0	D ₄₀ to D ₄₁	Session number	2
0	D ₄₂ to D ₆₃	Reserved and set to (00)	22
0	D ₆₄ to D ₉₅	Disc ID (in Lead-In Zone only)	32
0	D ₉₆ to D ₁₂₇	Application Dependent	32
0	D ₁₂₈ to D ₁₄₃	SES item 0	16
0	
0	D _{128+i} '16 to D _{143+i} '16	SES item i	16
0	
0	D _{128+(N-1)} '16 to D _{143+(N-1)} '16	SES item N-1	16
0	D _{128+N} '16 to D _{2 047}	Reserved and set to (00)	1 920 - N '16
1 to 15	D ₀ to D _{2 047}	Reserved and set to (00)	15 '2 048

FIG.22

Item byte position	Description	number of bytes
B ₀ to B ₂	Reserved Area item descriptor	3
B ₃	Reserved Area number	1
B ₄ to B ₇	Reserved Area start address	4
B ₈ to B ₁₁	Reserved Area end address	4
B ₁₂ to B ₁₅	Reserved and set to (00)	4

FIG.23

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Item byte position	Description	number of bytes
B ₀ to B ₂	Previous Session item descriptor	3
B ₃	Previous Session number	1
B ₄ to B ₇	Previous Session start address	4
B ₈ to B ₁₁	Previous Session end address	4
B ₁₂ to B ₁₅	Reserved and set to (00)	4

FIG.24